

## ABSTRACT

An implantable medical device system for detecting cardiac conditions such the long-term ischemic heart disease, an occlusion of a coronary artery by a thrombus or an impending as a myocardial infarction. The implantable medical device (IMD) system includes a sensor that outputs a blood flow rate signal representing a rate of blood flow through a coronary sinus of a patient's heart. An implantable medical device (IMD) includes a microcomputer circuit configured to analyze the blood flow rate signal and detect a cardiac condition as a function of the blood flow rate signal. The system can also includes an implantable lead that senses electrical activity from the patient's heart. The microcomputer circuit monitors an ST segment of the electrical activity signal and detects a cardiac condition as a function of blood flow rate signal in conjunction with the electrical activity signal.